

Plant Disease in Kansas

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Special points of interest:

- *Pine wilt now active*
- *Kansas again Karnal bunt free*
- *Wheat nematode results from survey in spring 2009*

Pine wilt is active

The first pine wilt report of the season were confirmed. A tree in Russell County at the I-70 truck stop was observed during the last week in June as dead. Consequently, a sample was taken 10 days ago and was found to have a high level of the pine wood nematode. Investigation found that the tree had suddenly died in late June. The immediate area had been under surveillance because of a find in summer of 2008. The tree was removed by KDOT and taken to the area landfill for burning.

Survey had identified trees around Abilene and Salina with new infections of pine wilt over the past two weeks.

Is this early for pine wilt? The answer is no. Trapping information of the sawyer beetle (vector) has shown some early

emergence of the adult beginning in mid to late May. Studies have shown that the disease causing nematode after being transmitted, can kill a tree in about 6 to 12 weeks. The recent observation was on target with the biology.

This pine death was from transmission during maturation feeding of sawyer young adults on new shoots and needles of the pine (nematode plant feeding phase). The nematode crawls out of the sawyer and invades the tree via the feeding wounds and feeds on plant cells. This phase is different than the fungus feeding phase of the nematode when the beetle lays its eggs in the dead tree and is transmitted by the fe-

male sawyer in oviposition.

The importance of the find to first detectors and landowners is now is the time to scout those immediate areas that pine wilt was observed last year. These sites are of highest risk to be epicenters of infection for 2009. Any infected trees should be removed and the wood destroyed by chipping or burning. The wood may also be buried.

Figure. 1 Pine wilt in a nursery



Karnal bunt surveyed completed for the 2009 harvest

Kansas wheat production was again found to be free from the disease known as Karnal bunt. Karnal bunt is a disease that is highly regulated by international plant health requirements. Many countries that import Kansas wheat have regulations requiring areas where

wheat was grown to be free from the disease.

Kansas wheat has been monitored annually since 1993 for the disease. The disease was first discovered in the US in Arizona in 1996. The disease has never been reported in Kan-

sas production of seed or grain.

A big thank you to the grain cooperatives across the state that participated.

PLANT PROTECTION AND WEED CONTROL
PROGRAM

PO BOX 19282
FORBES FIELD, BLDG 282, STREET 1
TOPEKA, KANSAS 66619-2180

Phone: 785-862-2180

Fax: 785-862-2181

<http://www.ksda.gov/plant%5Fprotection/>

WEB ADDRESS FOR THE PLANT
PROTECTION PROGRAM

AUTHOR: JON A. APPEL
PLANT PATHOLOGIST
KANSAS DEPARTMENT OF
AGRICULTURE

MANHATTAN, KANSAS
PHONE: 785-537-3155
EMAIL: JON.APPEL@KDA.KS.GOV



Plant Protection and Weed Control Program

Plant Protection and Weed Control staff work to ensure the health of the state's native and cultivated plants by excluding or controlling destructive pests, diseases and weeds. Staff examine and analyze pest conditions in crop fields, rangelands, greenhouses and nurseries. Action taken to control potential infestations of new pests, whether they are insects, plants diseases or weeds, is beneficial to the economy and the environment.

Our Mission is to:

- Exclude or control harmful insects, plant diseases, and weeds;
- Ensure Kansas plants and plant products entering commerce are free from quarantine pests;
- Provide customers with inspection and certification services.

The Plant Disease Survey in Kansas has been conducted since 1976. The survey addresses disease situations in field crops, native ecosystems, and horticultural trade. The Kansas Department of Agriculture works cooperatively with Kansas State University and Extension programs, United States Department of Agriculture, and various commodity groups.

Nematode survey of wheat fields in central Kansas.

The second year of a three year investigation into what plant parasitic nematodes are important to Kansas production was completed in 2009. The study was funded by the Cooperative Ag Pest Survey program by USDA-APHIS and conducted by KDA and KSU cooperators.

The area surveyed covered roughly the area from Dodge City north to Phillipsburg and eastward to Lincoln and Harper. Over 700 samples were collected at 1 acre sites and county quotas were based on wheat acreages of 1 sample per 4,800 acres. The survey struggled with weather condi-

tions including a blizzard in early April, flooding, and then dry soil like conditions.

Exotic nematodes were not found. These included the Mediterranean cereal cyst nematode, British root knot nematode, and the cereal cyst nematode. The most serious nematode species was *Pratylenchus neglectus*, a lesion nematode. This lesion nematode was found in the majority of sites in sampled roots. Populations ranged from 0 to over 75,000 per gram of dry root weight. Some populations studies have found about a 1% loss in production for every 1,000 nema-

tode in a gram of root. The average nematode population was 1,420 per gram for the survey in 2009. In 2008 where western Kansas counties were surveyed, the population averaged slightly higher at 1808 nemas per gram.

In 2010, the survey will be conducted in the eastern half of Kansas and include such counties of Sumner, Mitchell, Brown, Lyon, and Crawford.

Figure 2. Wheat roots without feeder rootlets because of damage caused by large lesion nematode populations.

